

Pasture degradation in LAC and indicators of soil health



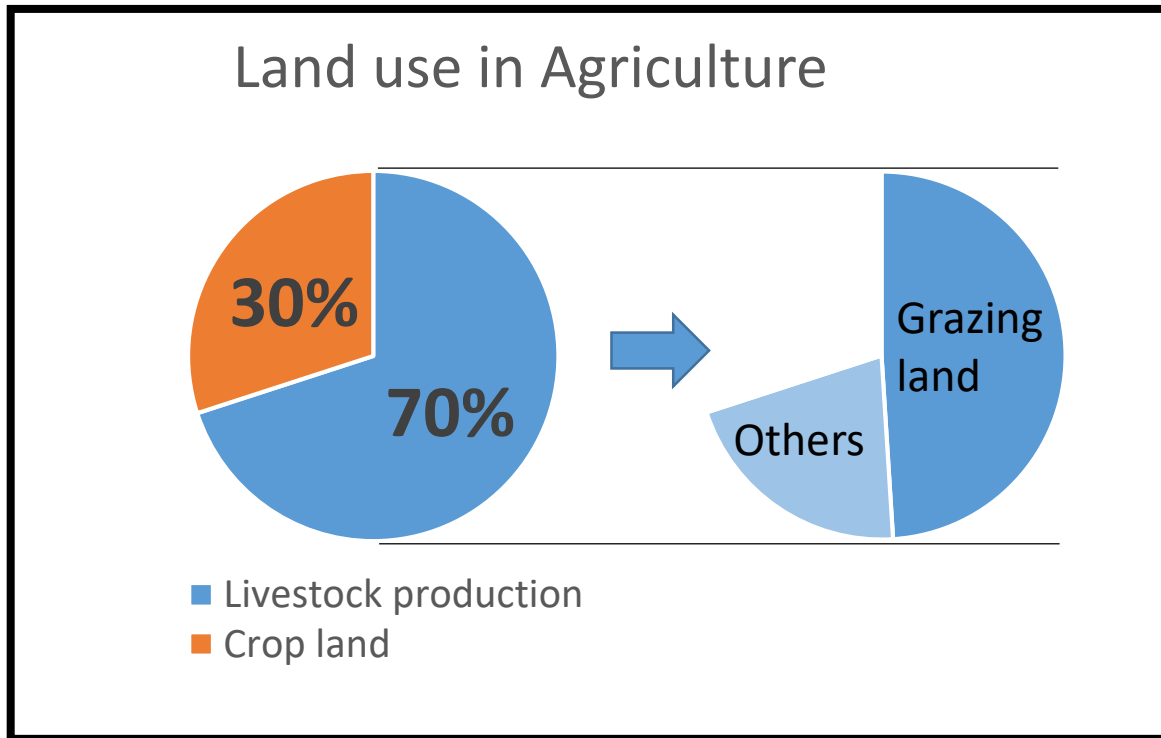
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Contents

- **Livestock, use of land and pasture degradation**
- **Pasture degradation**
- **Pasture degradation in Central America**
- **Some benefits of well-managed pastures**
- **Indicators of soil health**

Livestock, use of land and pasture degradation

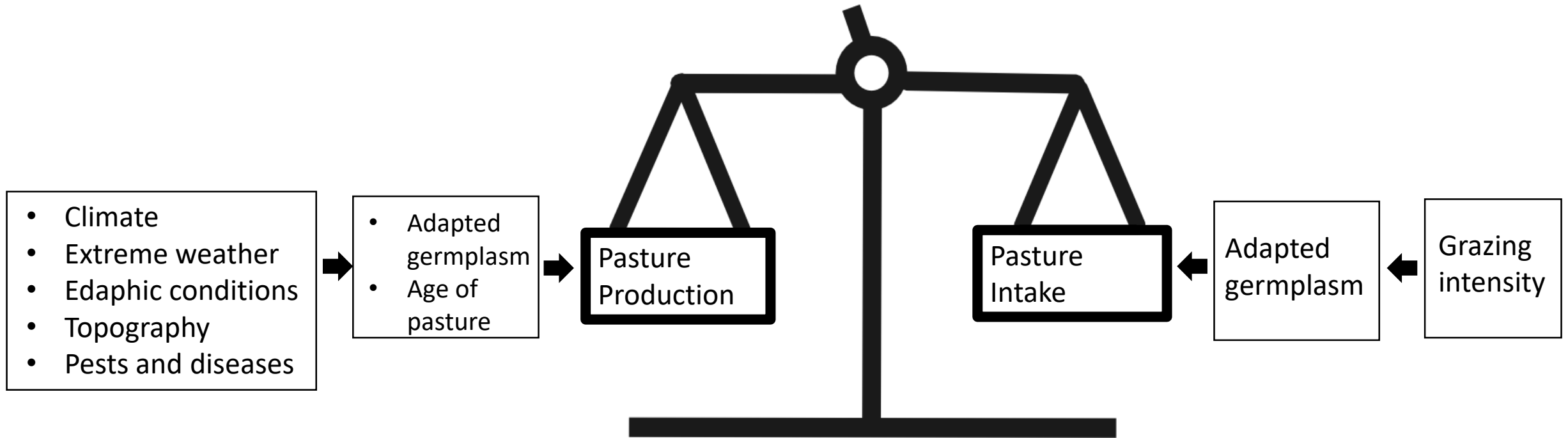


~200 millions of hectares

In America Latina alone, have been **degraded by overgrazing and other unsustainable production practices**. This negative impact is similar in most areas used for feed

Livestock is still the activity that contributes most to GDP in LAC

Pasture degradation



When the balance of pasture production and pasture intake is broken, degradation occurs

Pasture degradation in Central America

- Strong recent expansion of pastures into regions with fragile soils (Caribbean)
- 50-80% of grasslands (severely) degraded, 75% of deforested areas converted into pastures
- Stocking density 40% of well managed pastures (max. 1 LSU/ha)
- Management issues: permanent overgrazing, no rotational grazing
- Many pastures with steep slopes
- Pastures with improved grasses start degrading after 5-7 years
- Virtually no nutrient inputs (manure or chemical fertilizer)
- Macrofauna positively correlated with soil aggregate stability and estimated water holding capacity
- **Measurable improvements to soil health within two years after the establishment of improved pastures in degraded areas**



Some benefits of well-managed pastures

- Feed for Animals
- Release pressure to the forest
- Reducing the water footprint of Livestock-Crop production
- Mitigation climate change – reducing GHG emissions,
- Improvement soil health (e.g., SOM, SOC, water infiltration...)

Indicators of soil health

- SOM
- Microbial diversity
- Microbial abundance
- Aggregate stability
- Bulk density
- Macrofauna
- Soil enzyme activities

Indicators of soil health that can be assessed by farmers/researchers

They need to be:

- Low cost
- Rapid
- Meaningful

Aggregate stability

Aggregate Friability

Loss of organic matter on ignition

We are monitoring all of the above in different environments and countries